Newborn Screening ACT Sheet

Krabbe Disease (late-onset form)

Condition Description: Krabbe Disease (globoid cell leukodystrophy) is a lysosomal disorder caused by a deficiency of galactocerebrosidase, resulting in impaired turnover of myelin with subsequent dysfunction and eventual loss of oligodendrocytes and Schwann cells. There is variability in severity and age of onset. Newborns are expected to be asymptomatic.

Please Take the Following Immediate Actions:

- ☐ **Consult with a pediatric metabolic specialist at a Krabbe Referral Center. The specialist will order confirmatory labs** (See attached list)
- ☐ **Contact family to inform them of the newborn screening result.**
- ☐ **Provide the family with basic information about Krabbe Disease and its management.** (See FACT sheet attached)
- ☐ **Report findings to the newborn screening program.**
- ☐ **Collect repeat screen (between 7-14 days of life)** if the second screen has not been done.

The only available therapy is hematopoietic stem cell transplantation that is most effective if performed prior to the onset of clinical symptoms in the late-onset forms.

The patient should be seen in a designated transplant center under the care of a pediatric metabolic specialist.

Diagnostic Evaluation: Leukocyte galactocerebrosidase enzyme assay and measurement of erythrocyte psychosine concentration: Decreased enzyme activity is suggestive of Krabbe Disease, but this result alone does not exclude pseudodeficiency, which causes decreased enzyme levels without disease. Combined evaluation of galactocerebrosidase activity and psychosine concentration predicts the phenotype (unaffected vs. early vs. late-onset Krabbe Disease). Molecular genetic testing can confirm the diagnosis.

Clinical Considerations: This screening result is more likely associated with the late-onset forms of Krabbe Disease, but all forms of Krabbe Disease are associated with leukodystrophy, with age of onset and rate of progression varying widely. The only available therapy is hematopoietic stem cell transplantation that is best performed prior to the onset of clinical symptoms. Gene therapy and other clinical trials may be available. Saposin A deficiency has been described in <10 patients, is clinically very similar to Krabbe Disease, and may be detectable by newborn screening.

Additional Information:
How to Communicate Newborn Screening Results: https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/heritable-disorders/Resources/achdnccommunication-guide-newborn.pdf
Krabbe Disease, Gene Reviews: https://www.ncbi.nlm.nih.gov/books/NBK1238/
MedlinePlus: https://medlineplus.gov/genetics/condition/krabbe-disease/
Condition Information for Families- HRSA Newborn Screening Clearinghouse: newbornscreening.hrsa.gov/conditions/krabbe-disease
National Organization for Rare Diseases: rarediseases.org/rare-diseases/leukodystrophy-krabbes/